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AUTHOR Wilson, James L.
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ABSTRACT

This program was proposed and implemented to use the analysis of state-test results as a method for initiating specific changes in an existing curriculum and/or course of study. The program involved approximately 110 teachers and seven administrators in a low-middle-class suburban school district. Components of the program included (1) inservice training of staff in the analysis of test results and understanding of statistical terms, (2) workshop sessions in which teachers correlated test results with strengths or weaknesses in the curriculum, and (3) teacher development of recommended changes in the curriculum to compensate for weaknesses identified by the tests. The state tests were criterion-referenced based on specific objectives. The program emphasized the identification and reinforcement of objectives needing improvement rather than strategies for improving state test scores. (Author)

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STRATEGY FOR IMPROVING CURRICULUM

by James L. Wilson

Submitted in partial fulfillment of the
requirements of the National Ed.D. Program
for Educational Leaders, Nova University.

EA 008 474

Introductory Practicum
Dover Cluster
Submitted: June 4, 1976

Supervisor of Elementary
Education
New Castle, Delaware

ABSTRACT

This program was proposed and implemented to use the analysis of state tests results as a method for initiating specific changes in an existing curriculum and/or courses of study.

The program involved approximately 110 teachers and seven administrators in a low middle class suburban school district. Components of the program included (1) inservice training of staff in the analysis of tests results and understanding of statistical terms, (2) workshop sessions where teachers correlated tests results with strengths or weaknesses in the curriculum, (3) teacher development of recommended changes in the curriculum to compensate for weaknesses identified by the tests.

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INTRODUCTION

The Delaware State Department of Public Instruction has developed specific state objectives for students to have completed by fourth grade.

In conjunction with these objectives, the state has also developed an assessment test which is administered annually to all fourth grade students to measure their accomplishment of these objectives.

Unfortunately, the value of these state tests results is often quite limited because there is no established procedure within a district for interpreting the scores or using them to identify strengths and weaknesses in the curriculum.

The purpose of this practicum was to design such a procedure for the seven elementary schools in the New Castle-Gunning Bedford School District. The program is built around three major areas of focus:

1. Providing teachers with the knowledge necessary to understand and interpret state tests results.
2. Changing the strong negative attitude of administrators and staff toward state testing.
3. Modifying the curriculum based on information obtained from test results.

The third factor is the most significant because state tests results have not been considered in the past as a catalyst for curriculum change.

However, heavy emphasis in this program on the criterion-referenced facet of the state tests made this a viable approach which had not been previously executed.

Hence, the following is presented as a strategy for examining state tests results to determine strengths and weaknesses in the curriculum and to facilitate change based on this data.

CHAPTER 1

PRELIMINARY REVIEW OF THE PROBLEM

1.1 Previous Approaches to the Problem

In reviewing how state tests scores were previously utilized in the school district, a survey indicated they were used for:

(1) Comparing our district with other districts or comparing schools within the district.

(2) Determining the percentile rank of an individual student.

(3) Identifying broad areas of strengths or weaknesses, such as strong in reading, weak in math.

(4) Scratch paper, desk weights, etc. (reflecting a negative attitude toward the tests that exists in the district).

Such interpretation of scores confines the tests to simple summative evaluations at most. If the district was to significantly benefit from state tests, there was a need to utilize them as a formative evaluation and a strategy was needed to accomplish this.

Various approaches used in the past included:

(1) District staff doing the analysis and recommending changes at the district level.

(2) District staff doing the analysis and making presentations to building staffs indicating areas needing improvement in their schools.

(3) Building principals were simply given their state tests results and left to analyze them with their staffs in a manner of their own choosing.

1.2 Results of Previous Approaches

As might be expected, these attempts were unsuccessful in bringing about any significant change.

When district staff made the analysis with recommendations for change, they were seldom implemented by individual buildings because they were unaware of the criteria for the change and were not involved in the process.

Reporting on areas that needed improvement to building staffs often resulted in changes but these were frequently too extreme and many times without careful thought given as to whether the changes would indeed correct the weaknesses. It also created anxiety and defensiveness in the way building staffs related to district personnel.

The third method of simply giving the results to principals for their own use with staff was also unsuccessful because many lacked the necessary skills for interpreting the information.

CHAPTER 2

DETERMINING WHO SHOULD BE INVOLVED AND HOW

After reviewing the previous approaches, it was determined the primary task of the strategy was to determine who would be involved and how. It is essential that everyone involved in the program be aware of their roles as well as the roles of others previous to the beginning of the project. Such role clarification helps to eliminate defensiveness and identifies each participant's responsibilities.

2.1 Role of the Building Principal

Most research indicates the principal is the key element in determining the success or failure of a program within a building. With this factor in mind, the principal was made the focal point of the process. Principals received advanced and additional training, were given flexibility in determining criteria for identifying weaknesses and were allowed to select staff for item analysis.

2.2 Role of the Teachers

The teachers had three primary responsibilities. Firstly, they were responsible for becoming familiar with some basic statistical knowledge which was necessary for interpretation of the state tests results. This information was presented in two after-school workshops.

Secondly, they were required to do the actual analysis of the state tests results for their building indicating their strengths and weaknesses on objectives tested.

The final charge to the teachers was to recommend building and district changes which could be implemented to overcome identified weaknesses.

Released time and support personnel from the district office were available to all building staffs.

2.3 Role of Central Office Staff

Due to death, serious illness and budget cuts, central office staff was drastically reduced during the period of the project. However, the design initially indicated the major responsibility would fall on one person and the reduction in staff was not a major problem.

The central office staff had the following responsibilities:

(1) Designing the inservice programs.

(2) Training the administrators and staff.

(3) Developing the procedure for item analysis.

(4) Assisting individual staffs with analysis.

(5) Coordinating the program with personnel from the State Department of Public Instruction.

(6) Helping to implement recommended changes in the curriculum.

2.4 Role of State Department Supervisors

Two supervisors from the State Department of Public Instruction were utilized in the following manner:

(1) Resource people for district staff.

(2) Assisting in the inservice training of administrators and teachers.

(3) External evaluation of the project.

CHAPTER 3

DESIGNING THE PROGRAM

3.1 Developing a Positive Atmosphere

As a result of previous attempts to examine state tests results a defensive and negative attitude existed among staff. In order to develop a non-threatening and positive atmosphere toward the project, the following procedures were established. These procedures also were presented to building staffs prior to the beginning of the project.

(1) Scores would not be compared among schools.

(2) Test results would be interpreted at the building level. They would not be used to determine the performance of individual teachers.

(3) All staff would be involved, not just teachers at the grade level where the test was administered.

In addition to these procedures, a concentrated effort was made throughout the project to emphasize the positive facets of testing and how they can assist in curriculum development.

3.2 Identifying Statistical Knowledge Needed by the Staff

In talking with administrators and teachers it became evident that one of the real difficulties in the past was information being presented or tasks assigned based on the false assumption that educators had a basic knowledge of certain statistical data.

Therefore, the initial training of staff consisted of two after-school training sessions for each building to provide them with the following skills/knowledge:

(1) Understanding of raw score, sum, mean, standard deviation, standard error.

(2) Understanding of T score, percentile, stanine and their relationship to each other.

(3) In-depth understanding of T scores and their use.

(4) How to compute school to state ratios for categories and objectives indicated on the state tests. (Appendix C)

(5) How to determine level of significance.

Even before the training was completed there was expressed eagerness by several staff to become more involved with the actual test analysis. Where possible these individuals were selected to do the in-depth analysis in their buildings.

3.3 Identifying the Procedure for Analysis

As indicated previously, the project focused on the criterion-referenced facet of the test. The purpose for this type of analysis was based on the following logic:

(1) The state objectives have been adopted by the

local board as legitimate objectives for students in the district.

(2) The district is responsible for developing a curriculum to meet these objectives.

(3) The state tests measure the achievement of the state objectives. (There are from three to seven test questions for each objective measured.)

(4) Analysis of state test results can identify strengths and weaknesses within the curriculum.

The following procedure was developed for staffs to do the item analysis of their buildings. (Figure 1)

PROCEDURE FOR ITEM ANALYSIS

1. Identify the objectives in reading and math where the school mean differs from the state mean to the greatest extent.

2. Compute the average difference between the percentage of students within your school and the percentage of statewide students who correctly answered the items related to each objective. (Appendix C)

3. Rank order the objectives from strong to weak, i.e., positive to negative. (Appendix C)

4. Use rank ordering to identify strengths or weaknesses in the curriculum. Criteria will vary from school to school. For example: In a school where the average school to state ratio is +20 an objective with a +1 ratio might be considered a weakness. In another school this might be considered satisfactory.

5. Establish a criteria at the building level for determining what to classify as a weakness that needs concentration.

6. Correlate weakness with specific areas in the curriculum where this need should be met.

7. Identify objectives which you feel are not presently being met by the school/district curriculum.

Figure 1

3.4 Alternative Approaches for Gathering Information

In order to maximize input at the building level, individual principals and staffs were able to determine their own methods for gathering information. A "special purpose grant" (Appendix B) was written and obtained from the state to provide funds for the hiring of substitutes.

All staff participated in the inservice training but only twenty percent were involved in the actual item analysis due to funding limitations.

Primarily, three strategies were used by the different buildings to gather information.

(1) A key teacher from each grade level was released for three half days. These teachers did the item analysis together and emphasis was on determining what grade level should be concentrating on specific weaknesses identified.

(2) All teachers from grade four were released for four half days to do the item analysis. Emphasis was on developing diagnostic techniques which could be used to identify weaknesses earlier in the program.

(3) The principal did the item analysis and all the teachers in the building were released for one half day. Emphasis was on identifying major gaps in the curriculum.

Of these three approaches, releasing a key teacher from each grade level provided the most accurate and detailed analysis. This approach also developed a nucleus of teachers in each building who were the energizing force throughout the program.

Although the special purpose grant did provide a certain amount of free time it was only sufficient for doing the item analysis. Reports back to the entire staff and identification of curriculum changes were worked on during the regular school year with final reports due the first of March.

CHAPTER 4

OUTCOMES OF THE PROGRAM

4.1 Grade Level Identification of Objectives

Several predicted findings as well as some unexpected side effects were generated by the item analysis. The most significant, however, was the fact that in the majority of cases where a school scored exceptionally low on an objective (15% below the school average for that content area) it was because the objective was not taught at all.

The result of this finding was that in six of the seven schools the first step was to identify each low scoring objective by grade level where it should receive concentration. Figure 2 is a partial list of how these objectives were identified in one school. Figures 3 and 4 are a more detailed identification used by a school to relate weak objectives to the particular reading series used in their building. (This model appears in total as Appendix E.)

4.2 Changes in the Curriculum and Program

Certain findings in the follow-up mandated the need for specific curriculum and program improvements at the district and building levels.

NEW CASTLE-GUNNING BEDFORD SCHOOL DISTRICT
Commodore MacDonough Elementary School
Delaware City Elementary School

February 6, 1976

READING Objectives, Major Emphasis

Objective	Introduced	Major Emphasis
A	K	K - 1^2
B1	1	2^2 - 3^2
B2	1	2^1 - 3^1
B3 a	1^2	3 - 4^2
b1	2	3^1 - 4^2
b2	3^1	3^2 - 4^2
c1	1	2 - 3^1
c2	1	2^2 - 3^2
B4 a	1^2	2^2 - 3^2
b	2	3^1 - 4^2
c	2	3^1 - 4^2
d	2	3^2 - 4^2
e	2	3^1 - 4^2
B5a	2^2	3^1 - 4^2
b	3	3^2 - 4^2
c	3	3^2 - 4^2
B	1	1 - 4^2
C1a	3^1	3^1 - 4^2
b	3^1	3^1 - 4^2
c	1	1 - 4^2
d	2^2	3^1 - 4^2
e	1	2^1 - 4^2
f	1	1 - 4^2
g	1	1 - 4^2
h	1	1 - 4^2
i	2	2^2 - 4^2

(Reading)
pg. 1

Figure 2

Grade Level Identification of Objectives

Reading - Grades 2 through 4

The State/District objectives needing attention are listed with the letter and number symbol.

Columns are headed by letters that correspond to the American Book Company Read System titles, as follows:

E - Each and All

F - Far and Away

G - Gold and Silver

H - High and Wide

I - Ideas and Images

J - Joys and Journeys

The numbers and letters under the column headings correspond to the page numbers and section of the Teacher's Edition where the specific objective is taught.

One objective (D2.d) had no reference to a teacher's edition, so the Skill Book pages are given instead.

Figure 3

C-2e - Recognize and identify cause and effect relationships

E	F	G	H	I	J
20b(E) 46b(D) 52b(A) 117b(D) 87 b(C)	68b(E) 103b(C) 106b(E)	17b(E) 179b(E) 223b(D)	28b(C) 55b(D) 107b(E) 239b(D) 155b(E) 201b(D) 261b(E)	161b(A) 193b(E) 241b(E) 250b(D)	162b(A)

c-2-f - Make inferences after reading a selection

E	F	G	H	I	J
96b(A)	105b(A) 213b(D)	17b(E)		31b(A) 106b(F) 114b(D) 154b(A) 193b(A)	82b(C) 212b(E)

C-2-h - Recognize feelings and motives of characters after reading a selection

E	F	G	H	I	J
46b(A) 52b(C) 73b(C) 129b(C)	95b 203b	25b(C)	155b(D) 201b(D) 239b(E)	106b(A)	341b(C)

C-2-i - Summarize by identifying main ideas and supporting details

E	F	G	H	I	J
161b (B,C)	68b(G) 73b(G) 103b(E) 136b(A)		88b(C)	25b(A,E) 49b(B) 70b(A) 250b(A)	95b(C) 156b(A) 252b(A) 383b(E) 375b 323b(A)

Figure 4

In more than 30 instances it was determined that various objectives were not emphasized at any point in the district curriculum. This was especially true in English, science and social studies. As a result, three committees will be employed during the summer to modify the district curriculum in these areas. Most of the ground work for these committees is already completed as a result of recommendations by the different buildings. (Correlation of recommendations was quite high.)

Another significant finding was that in approximately 50 cases individual buildings found they lacked sufficient structure in their program to provide for the sequential development of skills. This was attributed primarily to the lack of the same basal text or program being used in grades one through four within a building.

As a result of these findings, the following guidelines were developed. (Additional funds were appropriated by the district to implement these guidelines within a two-year period.)

(1) Each school must identify a basal reading series which will serve as their primary text in grades one through four.

(2) The committees working on English, science and social studies must identify two basal

series and supplementary materials that direct themselves to the state objectives.

(3) All elementary schools in the district will use the same mathematics series. Two of the schools, in making recommendations, identified a particular text they felt correlated exceptionally well with the state objectives. Further examination reinforced this recommendation.

It should be pointed out that in addition to the major changes indicated a large number of modifications occurred within each building. Figure 5 is an example of the guideline used by the building principals for identifying modifications within their buildings.

The extent of change in the curriculum was also reflected in the teacher survey where teachers indicated an average of seven when responding to the following statement:

I feel that there have been some definite changes or recommendations for changes in our instructional program as a result of analyzing state test results.

No Change 0 1 2 3 4 5 6 7 8 9 10 Extensive Change

OBJECTIVES TESTED

Grade 4

Data Source DEAP 1975

Subject Mathematics

School B

Suggested areas for special attention: all objectives where local percent of correct responses was less than 5% above state percent of correct responses

Objective Number	Objective Paraphrased	Average % difference above/below state correct responses	Potential strategies for implementing deficiencies
H.	Probability and statistics	+6.0	
C9.	Add and subtract a pair of like fractions	+6.0	
D1.	Solve simple open sentences using whole numbers	+5.5	
C.	Operations and properties	+5.4	
C2.	Multiply whole numbers up to a 3-digit factor by a 2-digit factor	+5.3	
P4.	Add and subtract measurements that do not involve converting from one unit to another	+4.2	

Figure 5

Analysis and Recommendations Report Form

4.3 Changes in Teacher Attitude

One of the main concerns in focusing attention on state tests results is teacher attitude. Without a positive, or at least supportive attitude among staff, the potential for any significant change or improvement in curriculum is negligible. As indicated, previous experience with analysis of tests results had created a negative attitude in the district. However, throughout this program teachers appeared involved and supportive. Accomplishments further indicate a positive attitude toward the effort.

Upon completion of the program a survey was given to all elementary staff involved. Averages of all the responses are indicated in Figure 6. The district average also reflects building averages with one exception, where the attitude was extremely negative because of emphasis on test scores by the building administrator. The test score emphasis in this building also affected what they were able to accomplish and further devalued their attitude toward the program.

As the survey indicates, teachers rated highly their increased understanding of state tests results and scores. Further investigation revealed this single factor was probably the most responsible for the program being successful.

One of the goals of the project was to improve teacher

NEW CASTLE-GUNNING BEDFORD SCHOOL DISTRICT

1976
D E A P SURVEY

District Average (School) ____ 4 (Grade Level)

This year we have had a variety of activities that focused attention on state objectives and state tests. In order to assess these activities I would appreciate your response to the following:

A. Activities increased my knowledge of the state testing program.

Definitely No — Definitely Yes

0 1 2 3 4 5 6 7 8 9 10 (X at 7)

B. Activities increased my understanding of state test results and scores.

Definitely No — Definitely Yes

0 1 2 3 4 5 6 7 8 9 10 (X at 8)

C. I feel that our students would score about the same on other standardized tests such as the Metropolitan, Iowa Test of Basic Skills, etc.

Definitely No — Definitely Yes

0 1 2 3 4 5 6 7 8 9 10 (X at 5)

D. I feel that there have been some definite changes or recommendations for changes in our instructional program as a result of analyzing state test results.

No Change — Extensive Change

0 1 2 3 4 5 6 7 8 9 10 (X at 8)

E. I feel that follow-up on state test results should occur each year.

Definitely No — Definitely Yes

0 1 2 3 4 5 6 7 8 9 10 (X at 5)

F. My attitude toward state testing is

Extremely Negative — Extremely Positive

0 1 2 3 4 5 6 7 8 9 10 (X at 5)

G. Last year my attitude toward state testing was

Extremely Negative — Extremely Positive

0 1 2 3 4 5 6 7 8 9 10 (X at 4)

FIGURE 6

attitude toward state testing. Results of the survey indicated there was little change in this area. In follow-up discussion with staffs it was indicated the attitude probably remained the same because teachers were still concerned about the potential misuse of the information. It was recommended that if the survey was used again it should ask staff to indicate their attitude toward how the tests results were used in this program compared to previous approaches rather than their opinion of state tests.

4.4 District Procedure Adopted

Programs often receive good evaluations or have positive results and are not implemented as part of the ongoing operation. For this reason, a presentation concerning the program was made to the board and administrators with tne recommendation that the procedure be adopted. The recommendation was approved and the procedure and time line (Appendix F) will be implemented as part of the regular school program beginning July 1, 1976.

CHAPTER 5

REPORTING OF THE PROGRAM

5.1 Conclusions

As a result of this program the following conclusions have been formulated:

(1) Analysis of state tests scores can be used to facilitate curriculum change.

(2) Three factors directly affect teacher attitude toward tests results and their uses.

  (a) Their own knowledge and understanding of the information provided.

  (b) Their amount of involvement.

  (c) Whether the results are used in a formative or summative manner.

(3) Most identified weaknesses are caused by voids in the curriculum rather than the curriculum being taught inadequately.

(4) State tests can identify strengths and weaknesses when the test questions are directly related to specific objectives or criteria.

The conclusions as stated would probably be valid for any district working with analysis of standardized tests results. In

addition, the following also proved true for the particular district involved:

(1) By developing an extensive and unified program, several desired changes were brought about that had not occurred when these changes were attempted individually.

(2) Funding beyond normal allocations was appropriated to accomplish recommendations from the program. Previous attempts through other approaches had not been successful.

(3) Although teacher attitude was supportive of the process and specific results were achieved, there was no significant improvement in teacher attitude toward state testing.

5.2 Dissemination

The results of the program have been shared with supervisors from the State Department of Public Instruction and with the executive committee of the Delaware Elementary School Principals Association. Their comments and suggestions were solicited but no changes were recommended.

As this procedure is repeated and expanded into the middle

schools, longitudinal follow-up will also be disseminated.

(Evaluation criteria not included in the body of the report appear in Appendix G.)

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APPENDICES

USES OF THE INDIVIDUAL STUDENT RESULTS

Activity	Method	Possible Application	Interested Personnel
1. Identification of Extreme Cases.	Prepare a listing of all students with t-scores outside the range of 40 to 60 or other range suitable for school.	*Can be used to identify students who should be given further diagnostic tests. *Can be used for placing students in classes.	Principal Teachers Guidance Counselors
2. Comparison of Student's Scores with Others in the State and the District.	*Direct comparison is given on the label in terms of state and district percentiles.	*Can be used in parent conferences to explain general academic progress of the student.	Parents Teacher (1975-76) Guidance Counselors
3. Comparison of Student's Scores Across Various Tests.	*Can be shown visually by plotting scores on the charts given in Manual 1, page 14.	*Useful in placing students in various programs or courses.	
4. Comparison of Student's Ability and Achievement Scores.	*The latter two comparisons can most easily be made by plotting the student's t-scores on graphs given in Manual 1, page 13.	*Can be used in determing those major content areas in which the student does most well and least well. *Permits the identification of "underachievers" and "overachievers."	

SUGGESTED STEPS IN ANALYZING SCHOOL RESULTS

Activity	Method	Applications	Personnel
1. Review individual student results	As suggested in handout materials	*Counseling *Placement *Parent conferences *Teacher information *Identifies students for whom individual student response report should be reviewed	Work can be done by principal, guidance counselors, or teachers
2. Check internal consistency of all group reports	*Compare means, standard deviation and number of students as given on the summary and distribution reports *Compare the frequency as given on the distribution reports and histograms.		Work can be done by principal or guidance counselor
3. Look up estimated standard error of mean and determine probable range of school mean on each test	Procedure is outlined in Manual 2	*Permits comparison of school means on various tests *Required in determining if school means differ from state mean or district mean	Work can be done by principal or guidance counselor
4. Compare school means on various tests	See Manual 2	Identification of major content areas where apparent strengths or weaknesses occur	Work can be done by principal

Activity	Method	Applications	Personnel
5. Compare school means to other schools in the state	Plot a graph of the school profile using blanks provided in these handout materials and in Manual 2	*Provides information on how the school compares with other schools in the state. *May also be used to determine "relative" strengths and weaknesses in school program	Work can be done by principal and can be shared with staff
6. Review histograms	Procedures are outlined in Manual 2	*Provides a graphic display of the distribution of scores thus indicating whether the group is similar or different from the statewide group. *Also identifies the approximate percentage of extreme cases in the school *May be useful in explaining an unusually high or low school mean on a given test	The review should be done by the principal or his designat but graphs make good starting point for staff discussion of areas of strengths and weaknesses
7. Prepare a brief presentation for the staff	The highlights of your school's results can be shown adequately using the graph of the school profile and some of the histograms	*Should spark some interest in the staff for further analysis of the data using the item response report *May lead to training session on use of individual data	

Deadline: November 26, 1975
Submit To: Dr. [illegible] E. Wise, Director
Planning, Research & Evaluation Division
Department of Public Instruction
John G. Townsend Building
Dover, Delaware 19901

DEPARTMENT OF PUBLIC INSTRUCTION
PLANNING, RESEARCH, AND EVALUATION DIVISION
DOVER, DELAWARE

PROJECT PROPOSAL FOR A MINI PROJECT IN THE LOCAL USE OF DELAWARE EDUCATIONAL ASSESSMENT PROGRAM DATA

FROM

NEW CASTLE-GUNNING BEDFORD
(School District)

ASSURANCES

A. We hereby assure that no person will be compensated more from funds derived from the project than would normally be received from state and local funds.

B. We hereby assure compliance with Title VI of the Civil Rights Act of 1964.

C. We hereby agree to submit the evaluative documents required by the "Guidelines for Delaware Educational Assessment Program Mini Projects, 1975-76" to the Department of Public Instruction.

DATE November 6, 1975 SIGNATURE [signature] (Person Preparing Proposal)

DATE November 6, 1975 SIGNATURE [signature] (Chief School Officer)

I. PROJECT DESCRIPTION

A. Project Objectives: State the one or two key objectives to be accomplished through mini project activities.

1. Individual schools will identify major weaknesses in their curriculum by analyzing student responses to the objectives tested by DEAP.

2. Individual schools, having identified areas of weakness, will specify where in their school program those objectives needing reinforcement will be emphasized.

B. Project Summary: In one or two paragraphs summarize the major activities, personnel involved, and duration for the proposed mini project.

The above objectives will be accomplished by releasing teachers for half-days to work on the project. (Much preliminary work has already been done with analysis of information.)

Emphasis will be on determining what grade level, department, team, etc. should concentrate on teaching a particular objective that the school scored poorly on.

These activities will be completed by the end of January.

C. Project Evaluation: List the kinds of information you will collect from the participants to indicate the success of the project (e.g., teacher comments, survey results, etc.).

Each school will prepare a list of objectives they plan to concentrate on and the criteria by which objectives were selected in each subject area -- (example - 10 below the state average).

Each school will identify by grade level, team or department where that objective will receive emphasis.

Both of the above lists will be distributed and shared with the staffs of the individual schools.

Staff reaction to the project will be reported by the principal. Also, any significant difference in test scores for the following year will be noted and an effort will be made to determine if the difference was the result of the project.

D. Total Funds Requested: $ 1,330.00

II. PROJECT ACTIVITIES

ACTIVITY	PERSONNEL	DURATION	STARTING AND COMPLETION DATES	ESTIMATED COST OF ACTIVITY
List and Describe the Specific Tasks That Will Be Performed	Indicate Number & Type of Personnel That Will Be Involved In Each Activity	Estimate Number of Working Days for Each Activity	Specify Proposed Start & Finish Date For Each Activity	Indicate Amount & Source (DEAP, State, LEA) of Planned Expenditures
A. Teachers and principals, having identified areas of weakness, will specify where in their school program those objectives needing reinforcement will be emphasized.	26 teachers in 7 elementary schools plus 6 building administrators and a district supervisor.	2 half-days or 1 full day per teacher (26 days total). Days for building administrators and supervisor undetermined.	December through January with specific dates to be determined by building principals.	Amount: $665.00 Source: DEAP
B. Teachers and principals, having identified areas of weakness, will specify where in their school program those objectives needing reinforcement will be emphasized.	26 teachers in 3 middle schools plus 3 building administrators, 3 guidance counselors and a district supervisor.	2 half-days or 1 full day per teacher (26 days total). Days for building administrators, guidance counselors and supervisor undetermined.	December through January with specific dates to be determined by building principals.	Amount: $665.00 Source: DEAP
C.				Amount: Source:
D.				Amount: Source:
E.				Amount: Source:

(Appendix C has been extracted in part from Manual 2 of the Delaware Educational Assessment Program.)

Determining Program Strengths and Weaknesses

I. At each grade level, select the subject in which the local mean score differs from the statewide mean score to the greatest extent.

A. This selection can be made by referring to the appropriate:

1. graph of the School Profile, or
2. table of school norms and Distributions of Student T-scores.

II. Compute the average difference between the percentage of local students and the percentage of statewide students who correctly answered the items in each major category.

A. A major category is identified by a letter. Figure 5 shows three major categories.

1. A. Numbers/Numerals.
2. B. Numeration.
3. C. Operations and Properties.

B. The average difference is obtained by adding the figures in the "difference" column algebraically and dividing the sum by the number of items in the category. The average differences for the three major categories in Figure 5 are:

1. A. Numbers/Numerals, $\frac{-33}{19}$ or -1.7

2. B. Numeration, $\frac{-15}{5}$ or -3.0

3. C. Operations and Properties, $\frac{-6}{4}$ or -1.5.

III. Rank order the major categories from strong to weak, i.e., positive to negative.

A. In Figure 5 there are no positive major categories, but they can still be ranked from strong to weak as follows:

1. A. Operations and Properties, -1.5

2. B. Numbers and Numerals, -1.7

3. C. Numeration, -3.0.

IV. If possible, analyze the major categories of objectives to further delineate specific areas of deficiency.

A. Examine the Item Response by Objectives Report for each major category to see if it is further divided into responses to items linked to specific objectives. In Figure 5, the only major category that is so divided is A. Numbers/Numerals.

B. Compute the average difference between the percentage of local students and that of statewide students who correctly answered the items linked to each objective. In Figure 5, A. Numbers/ Numerals is divided into a general category and three objectives:

1. A.1. Use qualitative terms to compare sets of objects.

2. A.8. Recognize simple fractional parts of a unit such as halves and fourths.

3. A.10. Name the cardinal number of any illustrated set of up to 100 elements and vice versa.

C. The average difference is obtained by adding the figures in the "difference" column algebraically and dividing the sum by the number of items pertaining to the objective. The average differences for the three objectives under A. Numbers/Numerals in Figure 5 are:

1. A.1. Use qualitative terms to compare sets of objects,

$$\frac{-24}{3} \text{ or } -8.0.$$

2. A.8. Recognize simple fractional parts of a unit such as halves and fourths,

$$\frac{-22}{3} \text{ or } -7.3.$$

3. A.10. Name the cardinal number of any illustrated set of up to 100 elements and vice versa,

$$\frac{5}{3} = 1.7.$$

D. Rank order the objectives from strong to weak, positive to negative. In Figure 5, the objectives listed under major category A. Numbers/ Numerals ranked from strong to weak are:

1. A.10. Name the cardinal numbers of any illustrated set of up to 100 and vice versa, 1.7.

2. A.8. Recognize simple fractional parts of units such as halves and fourths, -7.3.

3. A.1. Use qualitative terms to compare sets of objects, -8.0.

The results of applying the procedure for determining strengths and weaknesses (sometimes referred to as a needs assessment) to the data in Figure 5 are tabled in Figure 6. The procedure may be applied to the data in the Item Response by Objectives Report for any subject at any grade level.

FIGURE

DELAWARE EDUCATIONAL ASSESSMENT PROGRAM
ITEM RESPONSE BY OBJECTIVES REPORT - 1975

CODE: 38550 DISTRICT: VAUGHEL
GRADE: 1
TEST: MATHEMATICS SCHOOL: NORTH ELEMENTARY
PAGE: 1 OF 3 N = 182

ITEM	A	B	C	OMIT	PERCENT CORRECT - STATE (S)	DIFFERENCE (L-S)
PERCENTAGE OF STUDENTS RESPONDING TO EACH ITEM CHOICE - LOCAL (L)						
A. NUMBERS/NUMERALS						
2	82 *	6	12	0	82	0
6	2	95 *	3	0	96	- 1
7	93 *	4	3	0	87	6
10	5	87 *	7	1	86	1
25	2	21	76 *	1	81	- 5
28	1	1	98 *	0	99	- 1
30	12	74 *	12	2	76	- 2
36	14	4	82 *	0	72	10
45	85 *	4	10	1	88	- 3
48	3	95 *	2	0	92	3
A1. USE QUALITATIVE TERMS TO COMPARE SETS OF OBJECTS.						
3	60 *	7	32	1	76	-16
27	79 *	16	5	0	79	0
39	13	9	78 *	0	86	- 8
A8. RECOGNIZE SIMPLE FRACTIONAL PARTS OF A UNIT SUCH AS HALVES AND FOURTHS.						
12	7	5	88 *	0	88	0
13	39 *	29	32	0	59	-20
16	66 *	28	6	0	68	- 2
A10. NAME THE CARDINAL NUMBER OF ANY ILLUSTRATED SET OF UP TO 100 ELEMENTS AND VICE VERSA.						
1	1	2	97 *	0	98	- 1
43	3	91 *	5	1	90	1
44	3	91 *	5	1	86	5
B. NUMERATION						
5	51 *	28	20	1	56	- 5
15	1	94 *	5	0	95	- 1
17	7	5	88 *	0	87	1
(25)	2	21	76 *	1	81	- 5
47	39	55 *	6	2	60	- 5
C. OPERATIONS AND PROPERTIES						
34	12	21	66 *	1	75	- 9
41	21	63 *	15	1	63	0
42	40 *	19	30	3	45	3
51	76 *	5	19	0	76	0

FIGURE 6

RANK ORDER OF MAJOR CATEGORIES AND OBJECTIVES
1975 DEAP

Grade 1 Subject Mathematics School North Elementary District Waredel

School to State Comparisons of Major Categories

	Category	Average Difference
C.	Operations and Properties	- 1.5
A.	Numbers/Numerals	- 1.7
B.	Numeration	- 3.0

School to State Comparisons of Objectives

	Objective	Average Difference
A.10.	Name the cardinal numbers of any illustrated set of up to 100 elements and vice versa.	1.7
A.8.	Recognize simple fractional parts of a unit such as halves and fourths.	- 7.3
A.1.	Use qualitative terms to compare sets of objects.	- 8.0

STATE OF DELAWARE

COMMUNICATIONS OBJECTIVES

READING

GRADE TWO THROUGH GRADE FOUR

A. READINESS

Readiness is conceptualized as a set of skills and attitudes which are necessary for success in reading at any level. Readiness is the demonstration of mastery of word recognition, comprehension, and study skills introduced at earlier levels. (See Reading Objectives - Grade One.)

B. WORD RECOGNITION

At the end of the regular fourth grade program in communications, a student should be able to:

B1. Context. Use syntactic and semantic clues for word identification (e.g., use context clues to check word pronunciation reached through other word recognition techniques).

B2. Sight Vocabulary. Increase the number of words recognized by immediate recall.

B3. Phonic Analysis. Form association between letters and sounds.

a. Consonants

1. Recognize a word containing irregular or variable consonants and represent consonant sounds correctly when reading a word (e.g., knock, precious, measure).

b. Vowels

1. Pronounce words containing long, short, or r-controlled vowels.

2. Recognize a word containing irregular or variable vowels and represent the vowel sounds correctly when reading the word (e.g., aisle, flood, dough, chief, caution).

c. Word Patterns. Master patterns of letters as representing common phonic generalizations.

1. Use knowledge of one word representative of a pattern to identify another word (e.g., knows like and can identify hike).

2. Recognize certain vowel and consonant patterns (e.g., consonant-vowel, consonant-vowel-consonant, consonant-vowel-consonant-final e, consonant-vowel-vowel-consonant).

B4. Structural Analysis. Use word parts in the identification of words.

a. Identify compound words.

b. Identify the root word when prefix and/or suffix are attached.

c. Pronounce words containing a prefix and/or suffix.

d. Identify new words formed by varying inflectional endings (e.g., fly-flies, smooth-smoothest).

e. Syllabify multi-syllable words.

B5. Dictionary Skills. Use the dictionary as an aid to the pronunciation of a word.

a. Identify the accented syllable(s) in a familiar word.

b. Use a phonetic key and a phonetically respelled word to pronounce unknown syllable(s).

c. Correctly pronounce a phonetically respelled word, accenting the proper syllable(s).

B6. Application of Skills in Combinations. Demonstrate a balanced use of word recognition skills -- context, phonic analysis, structural analysis, dictionary skills -- rather than excluding or overusing some.

C. COMPREHENSION

At the end of the regular fourth grade program in communications, a student should be able to:

Manor Park School
January 19, 1976

TO: Manor Park Staff and Jim Wilson

FROM: Eileen May, Paul Wildey, Erma Wood and R. L. Davis

RE: Delaware Educational Assessment Program Mini Project

1. 1974/75 grade 1 and 4 Assessment Test results were analyzed and State/District Objectives which were being met the least effectively were identified (enclosure 1).

2. Three teachers were released two half days. One half day of allocation was not used. Objectives of project were:

   A. Reading

      (1) relate weak State/District Objectives to American Book Company Read System objectives and identify specific locations in ABC program where weak objectives are emphasized.

   B. Mathematics

      (1) relate weak State/District objectives to Holt Mathematics system and identify specific locations in Holt program where weak objectives are emphasized.

   C. Tabulate information from A & B above, establish a useable format, and introduce to staff with appropriate explanation (enclosure 2 & 3).

Reading - Grades 2 through 4

The State/District objectives needing attention are listed with the letter and number symbol.

Columns are headed by letters that correspond to the American Book Company Read System titles, as follows:

E - Each and All

F - Far and Away

G - Gold and Silver

H - High and Wide

I - Ideas and Images

J - Joys and Journeys

The numbers and letters under the column headings correspond to the page numbers and section of the Teacher's Edition where the specific objective is taught.

One objective (D2.d) had no reference to a teacher's edition, so the Skill Book pages are given instead.

C-1a - Use context clues to select the correct meaning of multi-meaning words in a selection

E	F	G	H	I	J
91b(C) 129b(A) 96b(D) 13b(A)	135(A) 95b(B) 125b(D) 222b(E) 87b(F)	7[illegible](A) 73b(C) 95b(D) 159b(B) 223b(D) [illegible](E)	36b(A) 201b(A) 21[illegible] (E) 239b(A) 173b(B)	49[illegible](C) 203b(A) 241b(C)	9b(A)

C-1e Recall the correct sequence of events

E	F	G	H	I	J
25b(A) 39b(A,B) 73[illegible](D) 82[illegible](C) 111b(D) 123b(B) 145b(C) 161b(D) 196b(C)	13b(C) 49b(D) 68b(F) 103b(A) 108b(A) 125b(B)	17b(C,D) 223b(A) 251b(C,E) 257b(B)	7b(C) 36b(B) 201b(E) 261b(B)	7b(C) 81b(B) 114b(A) 225b(C) 241b(A) 259b(C) 25b(C) 33b(A)	57b(C) 162b(B) 279b(C)

C-1-i - Supply appropriate synonyms and/or antonyms in a given selection

E	F	G	H	I	J
62b(E)	222b(A) 203b(A) 73b(C)	159b(A) 208b(A)		193b(E)	297b(A) 851b(C)

C-2-c Identify clues that led to a conclusion

E	F	G	H	I	J
161b(A)	31b(G) 37b(C) 73b(E) 144b(C) 125b(A)	190b(A) 223b(C)	18b(E) 167b(D) 186b(E)	49b(A) 70b(B,C) 143b(A) 193b(A) 114b(F) 225b(A,D)	364b

APPENDIX E

C-2c - Recognize and identify cause and effect relationships

E	F	G	H	I	J
20b(B) 46b(D) 52b(E) 117b(D) 187 b(C)	68b(E) 103b(C) 108b(B)	17b(B) 179b(B) 223b(B)	28b(C) 55b(D) 107b(B) 239b(D) 155b(E) 201b(D) 261b(B)	181b(A) 193b(E) 241b(E) 250b(D)	162b(A)

c-2-f - Make inferences after reading a selection

E	F	G	H	I	J
96b(A)	105b(A) 213b(D)	17b(E)		31b(A) 106b(F) 114b(D) 154b(A) 193b(A)	22b(C) 212b(B)

C-2-h - Recognize feelings and motives of characters after reading a selection

E	F	G	H	I	J
46b(A) 52b(C) 73b(C) 129b(C)	95b 203b	25b(C)	155b(D) 201b(D) 239b(E)	106b(A)	341b(C)

C-2-i - Summarize by identifying main ideas and supporting details

E	F	G	H	I	J
161b (B,C)	68b(G) 73b(G) 103b(B) 136b(A)		89b(C)	25b(A,E) 49b(B) 70b(A) 250b(A)	95b(C) 156b(A) 252b(A) 383b(B) 375b 323b(A)

APPENDIX E

D-2-d = Interpret symbols on maps, charts, graphs and other graphic presentations in order to answer question - No teacher guide reference

	H	I	J
Skill Book pages	26, 37	8, 32	9, 26, 39, 87, 115

D-3-a - Read a passage utilizing the appropriate rate of reading (skim, scan, study) in order to answer questions

E	F	G	H	I	J
				114b(C) 124b(C)	290b(E) 174b(E)

D-4-a - Alphabetize words (through the third letter)

E	F	G	H	I	J
			224b(B)		

D-4-C - Complete an outline of the main ideas given in an article

E	F	G	H	I	J
161b(C)	103b(B) 136b(A)	17b(D)	126b(E)	162b(A)	

APPENDIX E

PROJECT TIMETABLE

July - August	1. State test results will be received from the State Department of Public Instruction.
	2. Broad area interpretation of district test results.
September	3. Presentation of state test results to building and district administrators.
	4. Workshop session for administrators conducted by the staff from the State Department of Planning, Research, and Evaluation.
October	5. Apply for state grant to provide key teachers release time to work with administrators on in-depth analysis of test results at the building level.
	6. Presentation of state test results to individual school staffs.
	7. Review with individual staffs the state objectives and their correlation with the state tests.
November	8. Inservice training of teachers and administrators in methods for interpreting state test results.
December - January	9. Key teachers and building administrators released to a. perform in-depth analysis of state test results for their buildings; b. correlate state test questions with state objectives; c. identify specific weaknesses in each curriculum area and/or grade level.
February	10. Individual schools prepare final reports.
	11. Final reports are reviewed.
March	12. Project is evaluated and modified where needed.

EVALUATIVE DATA

The information below was indicated as evaluative criteria in the practicum proposal. As the program evolved, these factors were not considered as significant and do not appear in the body of the report.

1. Item analyses done by building staffs were above 95% accurate. Only one school's procedure, involving too many people (11), resulted in an inaccurate report which had to be corrected in the central office.
2. In determining the learning and retention of analysis skills and statistical terms, only those staff responsible for the item analysis were able to score 85% or above on a mini-quiz. It is apparent that a brief review will have to occur again next year before tests results are presented.